

Toph's Onsite Contest Handbook

Saturday, April 03, 2021

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Overview

Preparation is key to hosting a successful programming contest. Toph is here to help with the process. In this handbook, we list the elements of the contest environment that are necessary for ensuring the following:

- Fairness of the contests and the outcomes
- Robustness and resiliency of the environment
- Participants' ease and experience during the event

The organizer must implement all the details listed here with an exclamation mark (**!**) to ensure that the contest may be conducted in a fair environment.

Contest

Start Time: !

The contest must not start until each site confirms that all participants have been seated at their allocated computers, the allocated computers are in working condition, and the participants have received their credentials and were able to log in to Toph.

The contest will begin as per the instruction of the chief judge. Until then, contest managers may delay the start time of the contest as they see fit.

Post-Contest Judging Reviews: !

The judges must be given sufficient time for them to do any necessary post-contest reviews.

Plagiarism checking will be an important part of these post-contest reviews. This must be conducted before the winners are announced. The judges will report their findings to the chief judge. The chief judge must notify Toph of all of these findings.

Arrangement

Spread Participants Apart: !

Participants from the same institution must be spread as apart as possible throughout the contest sites. If the contest is being hosted in lab rooms, participants from the same institution must be in as many different rooms as possible before spreading them apart within the same room.

Minimum Distance: !

Each team must be spaced far enough apart so that neighboring participants do not have each others' computer screens in their periphery vision and soft discussions within a team cannot be overheard by neighbors. A gap of 4 feet or 1.2 meters is recommended.

Different Computer For Every Contest: !

The arrangement of participants must be different for every contest. A participant using a computer during a mock contest must not be assigned the same computer for the main contest.

Different Credential For Every Contest: !

Temporary handles and passwords will be different for participants for each contest. Credentials will be distributed to the participants 30 minutes before the start of the contest.

Computers

Contestants

Equivalent Configuration: !

A computer must be allocated for each team. All computers must be equivalent in terms of hardware specification and software configuration.

All external peripherals (keyboards, mice, etc) must be tested ahead of time and confirmed to be in working condition before the contest starts.

Standby Computers:

Since not all circumstances can be foreseen, an additional 15-20% of computers must be kept on standby. In situations where one of the allocated computers fails to perform, a team may be reallocated to a different computer from these standby ones.

Spare external peripherals should be kept handy in case one in use stops working for a quick swap.

Minimum Hardware Requirements:

- Processor: x86-64 CPU released after 2015, at least 2GHz
- Memory: 8 GB RAM
- Storage: 25 GB available, SSD
- Network: Ethernet 100Mbps

We recommend going above these minimum requirements as reasonably possible to ensure a pleasant contest experience.

Software Requirements:

All computers must be initially configured with a clean Windows or Linux (major distribution, LTS) installation.

Both Google Chrome and Mozilla Firefox must be installed. Either one of them may be set as the default web browser. But, it must be set consistently on each computer for the event. The homepage of both web browsers must be set to the event lander provided by Toph (see [Appendix I](#)).

Additional integrated development environments (IDEs), compilers, and interpreters must be installed on these computers (see [Appendix I](#) for the list).

Date/Time and Timezone:

An important and often missed detail is the date/time configuration of the computer. Please ensure the correct date/time is set as well as the timezone (e.g. Asia/Dhaka for events being organized in Dhaka, Bangladesh).

Limited Internet Connectivity: !

Computers intended to be used by contestants must have access to Toph only. No other websites or Internet services must be accessible from these computers.

This must be ensured at the network level through firewall configuration.

Please refer to the [Network](#) chapter for details on which IP addresses must be whitelisted.

Restricted Local Network Connectivity: !

All network connectivity between contestant computers must be denied at the firewall level.

Please refer to the [Network](#) chapter for details on which IP addresses must be whitelisted.

Backup Power:

Each computer must have its uninterrupted power supply (UPS), and all computers must collectively be under backup generator (or equivalent) support.

Toph's Compatibility Tester:

Toph provides a tool to ensure that the computer is configured well, and compatible with Toph's platform. The tool can be found here: <https://toph.co/compatibility>.

This tool must be run on every configured contestant computer. In case any of the tests fail with a warning (orange) or an error (red), the configuration of the computer must be checked and corrected.

The tool checks the web browser, the computer's date/time accuracy, connectivity to Toph's servers, and the Internet bandwidth.

Please contact Toph Support in case you have any questions regarding this tool and how any of the reported issues can be rectified.

Moderators

Contest moderators must* have access to computers equivalent to contestant machines with the following differences:

Unrestricted Internet Connectivity:

Contest moderators must be reasonably allowed access to all websites and Internet services.

** Some moderators may prefer using their portable computers. For convenience, their devices should be allowed access to the on-site Internet connection and power outlets.*

Internet and Network

Secondary/Fallback Internet Connection:

The network at each site must be equipped with a secondary Internet connection that the contest environment can fall back to in case the primary connection goes down.

Static Public IP Address:

Toph will configure the contest in a way that only computers from within the on-site networks can access the arena. To do this, Toph must know the Internet IP addresses that will be used by the on-site networks.

Please include the IP addresses of the secondary/fallback Internet connection as well.

Please provide us these IP addresses 7 days before the first contest.

Limited Internet Connectivity:

There are several ways of achieving this. Our recommended way is to configure the network's firewall.

All of Toph's public-facing services are available over the following IP addresses*:

- 172.104.160.52
- 172.104.35.211.

Rejecting any outgoing packets that are not destined to either of these IP addresses can be an effective way of limiting Internet connectivity to Toph only.

Please consult your network administrator for details on how this can be achieved. These restrictions must be applied to networks that are accessible by the contestants' computers.

Please contact Toph Support if further guidance is needed in this regard. The organizer-appointed network administrators must still be responsible for implementing these safeguards. We are happy to review and validate the configuration once completed.

** The IP addresses listed above are static and are used only for Toph's services. However, as this handbook ages, the information may become outdated. Please refer to <https://dots.fsapp.co/balancers-ap-south-1.toph.co/a> for an updated list of IP addresses that must be whitelisted.*

Restricted Local Network Connectivity:

Similar to how limited internet connectivity is configured, the same firewall can be used to deny all connectivity between any pair of contestant computers.

Please consult your network administrator for details on how this can be achieved. Please contact Toph Support if further guidance is needed in this regard.

Additional Appliances

Printers

Contestants are allowed to take printouts of their work-in-progress source code.

Include Computer Hostname/IP Address on Printouts:

Since a printer will be shared by multiple contestants, each page printed out must be tagged with the computer's identity that issued the print. A printout must be only handed over to the team that issued the print.

Projectors

In each room with contestants and moderators, a projector should be deployed. The contest standings (in kiosk mode) should be displayed through the projector. The kiosk standings will list the top 50 participants, and it will auto-update and auto-scroll.

Criterion 2021 Round 10 Standings						Toph				
Finished										
#						A 97/119	B 57/78	C 28/52	D 7/15	E 0/0
1	sansacqua	86 ↗	4	232	✓	✓	✓	✓	✓	
2	ishibly	53 ↗	4	263	✓	✓	✓	✓	✓	
3	fire_tornado	18 ↗	4	319	✓	✓	✓	✓	✓	
4	Shammo_CSE	460 ↗	4	357	✓	✓	✓	✓	✓	
5	sakib_muhit	69 ↗	4	359	✓	✓	✓	✓	✓	
6	ash_98	91 ↗	4	484	✓	✓	✓	✓	✓	
7	Neaj_Morshad	108 ↗	3	72	✓	✓	✓			
8	kzvd4729	6 ↗	3	72	✓	✓	✗		✓	
9	aritra741	10 ↗	3	91	✓	✓	✓	✓	✗	
10	ruhanhabib39	18 ↗	3	124	✓	✓	✓			

The kiosk can be accessed by opening the public standings and pressing Shift+K. You can then press F11 to go full screen on the kiosk page.

Please contact Toph Support if you have any questions.

Electronic Surveillance

Coverage: !

Any site where judges cannot be present must be under electronic surveillance. Such surveillance must include closed-circuit cameras. The cameras must cover every publicly accessible area of the contest site. The cameras must be angled such that each participant can be recognized at their computers as well as their computer screens can be seen. Real-time footage of the cameras must be provided to the judges during the contest.

Recordings: !

In case no members of the judging team can be present at a site, all surveillance recordings of that site must be provided to the judges at the end of the contest.

Laws and Regulations

Health and Safety:

The contest organizer must ensure a healthy and safe environment for the participants, the judges, and everyone else expected to be present in person at the contest sites. All laws, regulations, and social norms surrounding individual health and safety must be followed.

Contractions:

In case any details in this handbook are in contradiction with local laws and regulations, the latter must be honored. Such cases should be reported to Toph as early as possible so that Toph can also prepare accordingly.

Toph Support

Toph is happy and willing to provide top supervision of the setup before and during the event and provide guidance to respective technical teams to aid in the preparation for the event.

Please schedule a day (at least 7 days before the first contest) for us to review the contest environment once everything has been set up. We will check how the environment has been configured and provide any necessary feedback. Representatives of the technical teams must be present on that day during the review.

For any questions, please contact us over the phone (+8801310519655) or by email (support@toph.co).

Liabilities:

In case the organizer cannot arrange an opportunity for Toph to review the contest environment for any reason, ensuring the fairness of the contest will be beyond Toph's ability. And in such a situation, Toph cannot make any remark on whether the contest is being conducted in a fair environment.

Whether such a review happens or not, the organizer is ultimately responsible for ensuring that the contest environment has been prepared according to the best standards and as per the guidelines in the handbook. Toph can only help in the process through advice and guidance.

Glossary

(Contest) Environment:

The contest environment encompasses all the technical elements of the event, including, but not limited to, the computers, the network, Internet connectivity, printers, and projectors.

Site:

A site is a contest venue where participants are present and from where they participate in the contest.

Two contest venues are considered two separate sites if they are geographically apart, are not under the management of the same individuals of the organizing team, and it is unreasonable for judges to travel between such venues while the contest is in progress.

As such, it is subjective whether two separate buildings within the same compound may be considered two separate sites. But, contest venues in two separate districts must be considered two separate sites.

Participant:

A participant is a team (in team contests) or an individual (in individual contests) participating in the contest.

Change Log

April 03, 2021	Adapted for multi-site contests. Added health and safety-related details.
March 17, 2021	First version

Appendix I: {Contest} by {Organizer}

Contest Lander:

<https://{contest}.toph.co>

IDEs and Code Editors:

	<u>Website</u>	<u>Additional Plugins</u>
CodeBlocks	https://www.codeblocks.org/	
Geany	https://www.geany.org/	
NetBeans	https://netbeans.apache.org/	
Eclipse	https://www.eclipse.org/ide/	Kotlin for Eclipse https://github.com/JetBrains/kotlin-eclipse PyDev https://www.pydev.org/
IntelliJ IDEA	https://www.jetbrains.com/idea/	
IDLE	https://realpython.com/python-idle/	
PyCharm	https://www.jetbrains.com/pycharm/	
Sublime Text	https://www.sublimetext.com/	
Visual Studio Code	https://code.visualstudio.com/	

The IDEs and Code Editors are available for download at their official website (indicated above). Please download them and install them on the contestant computers.

For reference, the following toolchains will be used by Toph to compile and run submissions during the contest:

	<u>Versions</u>
C	C11 GCC 9.2 (GCC 9.2.0)
C++	C++11 GCC 7.4 (GCC 7.4.0)

	C++14 GCC 8.3 (GCC 8.3.0) C++17 GCC 9.2 (GCC 9.2.0)
Java	Java 1.8 (Java v1.8.0_03 (OpenJDK))
Kotlin	Kotlin 1.1 (Kotlin 1.1.0)
Python	PyPy 7.1 (3.6) (PyPy 7.1.1 (Python 3.6)) Python 3.7 (Python 3.7.4) Python 3.8 (Python 3.8.5)